AN EXPERIMENT ON MOSQUITO CAPTURING TECHNIQUE USING A DEMOUNTABLE CAGE.

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ABSTRAK

Makalah ini melaporkan suatu eksperimen penangkapan nyamuk menggunakan *demountable cage* di sebuah danau di Banyuwangi Jawa Timur.

Dari eksperimen itu terbukti bahwa perangkap yang kecil ternyata lebih praktis digunakan dibanding yang besar. Lebih mudah dibongkar-pasang dan dibawa-bawa. Di samping itu tangan lebih mudah menjangkau ke segala penjuru untuk menangkap nyamuk-nyamuk.

Metode penangkapan ini dapat digunakan sebagai teknik *sampling* dalam mengukur tindakan pengendalian larva, dalam mempelajari dinamika populasi, dan memeriksa ada-tidaknya perkembangbiakan nyamuk

INTRODUCTION

It has been known that *An. sundaicus* Rodenwaldt is the main vector of malaria in coastal area of Java and some other islands in Indonesia. This species can breed in brackish water of lagoon, swamp, fishpond and other type of brackish stagnant water. As noted by several authors this species is highly antropophilic and is a good malaria transmitter.

Number of entomological investigation teams have contracted malaria while doing night biling collections. Taking propylactic drugs can prevent this, but an alternative method of adult mosquitoes collection to avoid the malaria infection has been tried.

This paper reports an experiment of *An. sundaicus* collection using a demountable cage from a lagoon in Banyuwangi, East Java.

MATERIAL AND METHOD

Equipment.

The equipment used were (1) a number of demontable cages as emerence traps, (2) aspirators for collecting mosquitoes trapped in the cage and (3) paper cups for temporary holding of collected mosquitoes.

The demountable cage is made of a rectangular aluminium frame with nylon mosquito netting. This trial used two kinds of cages with dimention of 50 x 50 cm wide x 100 cm high and 1 x 1 m wide x 1,5 m high. They will cover $0,25m^2$ and 1 m^2 of breeding area respectively.

The big cage has two round holes of abount 20 cm diameter, through which the collector can take mosquitoes from the cage, while the small cage has one only. This cage can be assembled easily before use.

To avoid the disturbance of rain, a piece of plastic is used to cover it, with a cross hole of about 10 cm long on the center to allow the wind to pass through.

A piece of cotton soaked with sugar collection was put on the cage to supply temporary food emerging mosquitoes.

Procedure

As a preliminary trial one big and one small cage were put side on the surface of the breeding place at about 15.00 hours.

At about 06.00 hours the next morning, mosquitoes trapped in the cage were

collected and identified. This time of placing the traps and the collection of mosquitoes were followed in the experiment.

Three cages of 1 m^2 were put on different distances from edge of the lagoon, namely 1m, 31m and 91m at the north side of the lagoon. Six small cages were put at distance of 1m, 11 m (two cages), 31 m, 61m and 91m from the edge at he south side of the lagoon. All of these cages were put on fixed sites and mosquito collections were carried out in the morning of the first and the second day.

Table 1. Susceptibility level of *An. aconitus* larves to basudin.

Concentration (in ppm)	No. Tested	No. Dead	Mortality (in %)
1.000	57	57	100
0.500	52	52	100
0.250	50	50	100
0.125	47	44	94
0.0625	58	54	93
0.016	25	9	21
0.004	27	5	18
0.000 (Control)	49	0	0

RESULT

The first capture of the preliminary trial with the small and the big cage were 255 (126 females, 129 males) and 697 (326 females, 371 males) respectively, all identified as *An. sundaicus*. Another big cage which was put on the surface covered with algae and dead leaves yielded 661 (383 females, 278 males) all were identified as *An. sundaicus* too (Table 1). Other mosquitoes collected were a few *Culex* and *Mansonia sp.* Two dragon flies were also captured in the later cage.

Table 2 shows the result of mosquito collection of the experiment. The small cages, which were put at the south side of the lagoon, covered 1.5 m^2 of breeding place yielded 107 (63 females, 44 males) on the first day and 148 (70 females, 78 males) on the second day. All were identified as *An. sundaicus*. The big cages which were put at the north side of the lagoon covered 3 m^2 yielded 814 (410 females, 404 males) on the first day and 418 (190 females, 228 males) on the second day.

DISCUSSION AND CONCLUSIONS.

The small cage was more practicable to operate than big cage. It was easier to assemble and to carry and one collector could reach all points to collect

Tabel. 2. Result of Bioassay test on *An. acenitus* larvas to Basudin 60 Ec applioation.

	Troated Plot			Untreated Plot		
Cage No.	No. Tested	No. Dead	% Mart	No. Tested	No. Dead	% Mort
1	9	9	100	12	0	0
2	9	9	100	15	0	0
3	9	9	100	–	–	–
Total	27	27	100	0	27	0

resting mosquitoes in the cage. The cage can be put on selected surfaces of the breeding place. Accurate and detailed description of the surface should be made for meaningful comparison between various types of breeding sites.

The mosquitoes collected in the traps are newly emersed mosquitoes which can be used as material for the resistance tests by giving a blood meal first. For this purpose the female mosquitoes should be placed in a test tube to allow them to feed on bare armglaid over it. Then the mosquitoes should be transfered into a larges stock cage and randomization of blood fed mosquitoes can be caried out easily.

This method of collection can be used as a sampling technique to assess larval control measures, to study population dynamics, and to check the presence of mosquito breeding instead of dipping for larvae . The identification of adult mosquitoes is much easier than the identification of larvae.

For other purposes of sampling mosquito population densities other techniques should be developed, without exposing the mosquito collector unnecessarily to mosquito bites.

ACKNOWLEGEMENT.

The author wishes to express his gratitude to Dr. Lim Boo Liat, WHO–Consultant for Indonesia and Dr. Soetopo, DPH. Director, Research Centre of Health Service Development for their assistance in preparing this paper.

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